



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,885	08/26/2003	John Hoard	E-13657	4876

7590 06/28/2006

Douglas E. McKinley, Jr.  
McKinley Law Office  
P.O. Box 202  
Richland, WA 99352

EXAMINER
----------

JOHNSON, EDWARD M

ART UNIT	PAPER NUMBER
----------	--------------

1754

DATE MAILED: 06/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/648,885

Applicant(s)

HOARD ET AL.

Examiner

Edward M. Johnson

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Specification*

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because it exceeds 150 words in length. Correction is required. See MPEP § 608.01(b).

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Art Unit: 1754

4. Claims 1, 9-21, 29-41, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deeba et al. US 6,093,378.

Regarding claims 1, 21, and 41, Deeba '378 discloses a method for treating exhaust containing NOx comprising treatment with a first and second zeolite component (abstract), wherein the first component may be a barium Y zeolite (see column 11, lines 27-40), and reduces NOx at temperatures of about 150, 175-350, or up to about 325 degrees C (see column 8, lines 18-24). Deeba '378 further discloses pores of at least about 5 Angstroms (see column 10, lines 23-27), the second component comprising silver (see column 4, lines 42-46), and supported on gamma alumina (see column 12, lines 10-14 and column 8, lines 35-37).

Deeba '378 fails to disclose converting a portion of the gas stream to a reducing gas.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to convert a portion of the gas stream to a reducing gas because Deeba discloses the barium zeolite composition traps hydrocarbons and releases as reducing agent (see column 8, lines 13-19), which would motivate an ordinary artisan to trap the hydrocarbons as disclosed and convert them to reducing agent to be used in NOx conversion, as disclosed.

Art Unit: 1754

Regarding claims 9-11, 14-15, 29-31, 34-35, and 49, Deeba '378 discloses the first component may be a barium Y zeolite (see column 11, lines 27-40) with an exchangeable Na cation (see claim 16).

Regarding claims 12-13 and 32-33, Deeba '378 pores of at least about 5 Angstroms (see column 10, lines 23-27).

Regarding claims 16-20 and 36-40, Deeba '378 discloses the second component comprising silver (see column 4, lines 42-46) or In (see column 11, lines 49-54) and supported on gamma alumina (see column 12, lines 10-14 and column 8, lines 35-37).

5. Claims 2-8, 22-28, and 42-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deeba '378 as applied to claims 1, 21, and 41 above, and further in view of Balko et al. US 6,176,078.

Regarding claims 2-4, 22-24, 42-44, Deeba '378 fails to disclose acetaldehyde and formaldehyde.

Balko '078 discloses acetaldehyde and formaldehyde.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the acetaldehyde and/or formaldehyde of Balko in the NOx reduction over silver alumina zeolite process of Deeba because Balko discloses the acetaldehyde and formaldehyde for use in NOx control (title)

Art Unit: 1754

which exhibits improved NOx reduction in a silver aluminate catalyst (column 7, lines 62-63).

Regarding 5-8, 25-28, 45-48, Balko '078 discloses the presence of plasma to induce a number of reactions which produce molecules ideally suited for reducing agent (abstract).

**Conclusion**

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Grasselli et al. US 5,374,410 discloses a NOx effluent abatement process comprising reducing the effluent reducing NOx at 200-600 degrees C over zeolite (see abstract and Examples); Yamamoto et al. US 6,047,544 discloses NOx purification comprising contact with zeolite hydrocarbon absorbent formed on alumina substrate and having specific dimensions (see abstract and description).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward M. Johnson whose telephone number is 571-272-1352. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Edward M. Johnson  
Primary Examiner  
Art Unit 1754

EMJ